

Console Cable Troubleshooting – Bike and Elliptical



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DESCRIPTION

Use this guide to troubleshoot an analog console cable on an AFG, Livestrong, Vision, or Horizon bike or elliptical.

TABLE OF CONTENTS

Analog cable:	
10-Pin.....	2
8-Pin.....	3
7-Pin.....	4
6-Pin.....	5

10-Pin Analog Cable

This chart shows the voltage that you are expected to read from the lower electronics to the console cable:

Pin #	Pin Name	Electrical Characteristics (vdc)	Physical Symptoms If Wire Cut
1 PURPLE	Ground from RPM sensor	0	No speed, distance, or RPM readings.
2 BLACK	Ground from motor	0	When the resistance up button is pressed, the motor rotates upward continuously ¹ . After resistance down pressed, the motor freezes and does not zero itself. Eng1: Motor operates but does not change in motor count.
3 ORANGE	Zero switch to sensor	If zero switch engaged (lowest resistance level): +5.0, open. Any other resistance position: 0, short.	When the resistance up button is pressed, the motor rotates upward continuously ¹ . After resistance down pressed, the motor freezes and does not zero itself. Eng1: Motor operates but does not change in motor count.
4 BROWN	Optic count from motor	+5.0	When the resistance up button is pressed, the motor rotates upward continuously ¹ . After resistance down pressed, the motor zeros itself. Eng1: Motor operates but does not change in motor count.
5 GREEN	Power to resistance up	0 to +0.4 if motor idle. +8.5 if resistance increasing. +0.6 to +2.0 if resistance decreasing.	Console screen and resistance buttons seem to respond normally (levels on screen change with buttons), but no motor movement. Eng1: No motor movement and motor count does not change.
6 WHITE	Power to resistance down	0 to +0.4 if motor idle. +8.5 if resistance decreasing. +0.6 to +2.0 if resistance increasing.	
7 YELLOW	RPM Sensor	If magnet aligned with RPM sensor: 0, short. If magnet not aligned with RPM sensor: +5.0, open.	No speed, distance, or RPM readings.
8 GREY	Power to console from power supply	Dependent upon power supply.	No power to console.
9 BLUE	Ground from power supply	0	No power to console.
10 RED	Power to DC motor	+5.0	When the resistance up button is pressed, the motor rotates upward continuously ¹ . After resistance down pressed, the motor zeros itself. Eng1: Motor operates but does not change in motor count.



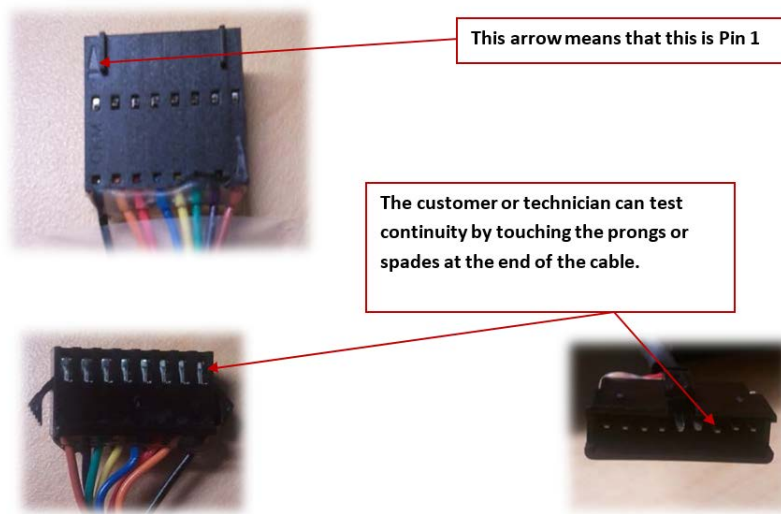
¹ The user may hear a hum from the motor and, after a minute, a clicking noise. It may feel like the resistance level constantly increases.

8-Pin Analog Cable

This chart shows the voltage that you are expected to read from the lower electronics to the console cable:

Pin #	Pin Name	Description	Electrical Characteristics (vdc)	Physical Symptoms If Wire Cut
1	Power	+12V power	+12	No power to console.
2	GND	Ground	0	No power to console.
3	COUNT	Resistance motor position counter	-5 ~ +5.0	Console screen and resistance buttons seem to respond normally (levels on screen change with buttons), but when the resistance up button is pressed, the motor rotates upward continuously ² . After resistance down pressed, the motor zeros itself.
4	UP	Resistance up signal	Open drain, +5.0	All units – console screen and resistance buttons seem to respond normally (levels on screen change with buttons), but: - Some units – no motor movement. - Some units – when the resistance up button is pressed, the motor rotates upward continuously². After resistance down pressed, the motor freezes and does not zero itself.
5	ZERO	Resistance motor 0 position	Open drain, +5.0	All units – console screen and resistance buttons seem to respond normally (levels on screen change with buttons), but: - Some units – the motor increases resistance in normal increments, but does not decrease. - Some units – when the resistance up button is pressed, the motor rotates upward continuously². After resistance down pressed, the motor freezes and does not zero itself.
6	DOWN	Resistance down signal	-5 ~ +5.0	All units – console screen and resistance buttons seem to respond normally (levels on screen change with buttons), but: - Some units – no motor movement. - Some units – when the resistance down button is pressed, the motor rotates downward continuously³. After resistance up pressed, the motor freezes and does not zero itself.
7	RPM	RPM sensor	0	No speed, distance, or RPM readings.
8	MOTOR SW	--	--	--

Note: To identify Pin 1, locate the arrow on the flat end of the bottom cable.



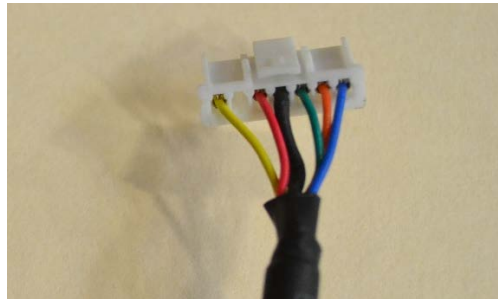
² The user may hear a hum from the motor and, after a minute, a clicking noise. It may feel like the resistance level constantly increases.

³ The user may hear a hum from the motor and, after a minute, a clicking noise. It may feel like the resistance level constantly decreases.

7-Pin Analog Cable

This chart shows the voltage that you are expected to read from the lower electronics to the console cable:

Pin #	Pin Name	Pin Description	Electrical Characteristics (vdc)
1 YELLOW	-T	--	--
2 (empty)	+T	--	--
3 RED	14VDC	Power	+13.9-16.0
4 BLACK	GND	Ground	0
5 GREEN	RPM	RPM Signal	+1.5-5
6 ORANGE	D/A	Digital to Analog	+0-3.5, depending on resistance level expected
7 BLUE	5.5VDC	Power	+5.4-7.0

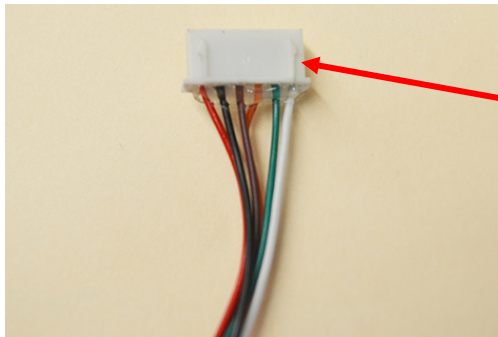


6-Pin Analog Cable

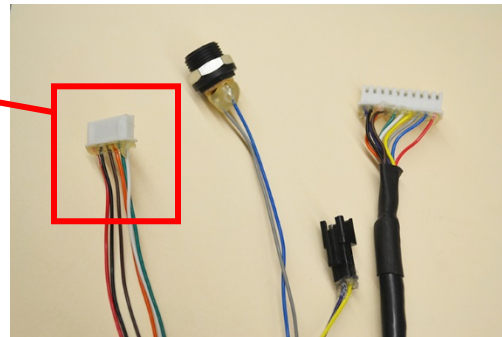
This chart shows the voltage that you are expected to read from the lower electronics to the console cable:

Pin #		Function	Voltage Ohm Readings	Voltage w/ Increase	Voltage w/ Decrease	Symptom When Wire Cut
1	Red	Power to DC Motor I.C. Board	+5vDC	5V	5V	After pressing Start and Resistance +, the motor continues to rotate upward. When pressing Resistance –, the motor stops but does not zero itself ENG1: Motor operates but no change in motor count
2	Black	Ground – From Motor	N/A Ground	N/A	N/A	After pressing Start and Resistance +, the motor continues to rotate upward. When pressing Resistance –, the motor stops, but does not zero itself ENG1: Motor operates but no change in motor count
3	Brown	Optic Count – From Motor	5vDC	180mV	180mV	After pressing Start and Resistance +, the motor continues to rotate upward. When pressing Resistance –, the motor stops, but does not zero itself ENG1: Motor operates but no change in motor count
4	Orange	Zero Switch Sensor	5V	180mV	180mV	After pressing Start and Resistance +, the motor constantly rotates. If pressing Resistance –, the motor zeros itself. ENG1: No motor movement. Value is displayed and does not change when pressing +/-
5	Green	Power to Resistance Up	12mV	8.5-9.7v	110mV	After pressing Start and Resistance +, value is displayed and there is no motor movement. ENG1: No motor movement and motor count does not change.
6	White	Power to Resistance Down	12mV	120mV	8.5-9.7v	After pressing Start and Resistance +, value is displayed and there is no motor movement. ENG1: No motor movement and motor count does not change.

Wire colors are subject to change.



6-Pin Connector



All Connectors on Cable